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ABSTRACT

This paper outlines characteristics of the digital information infrastructure at the College of Staten Island--City University of New York. It describes the college's vision for supporting faculty use of technology; the successful use of faculty peer-to-peer mentoring for expanding the pedagogic use of word processing, e-mail, listservs, home pages, the Internet for curriculum enrichment and research, and electronic materials (text, audio, images) in presentation programs. The paper describes the new Faculty Center for Excellence in Pedagogy and Media Technologies, a facility that provides faculty with access to two media specialist personnel and computer hardware and software, and two teaching laboratories, one for group instruction consisting of a network of 21 personal computers and another that is a 35-station teleconferencing laboratory for bridging learning distances. (Author)

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The Role of Facilities and Faculty Peer-to-Peer Mentoring in Supporting Faculty's Use of Multimedia/Computer Technologies in Support of Classroom Instruction

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Abstract:

The authors outline characteristics of the College of Staten Island/CUNY digital information infrastructure. They amplify the college's vision for supporting faculty use of technology. They illustrate the successful use of faculty peer-to-peer mentoring for expanding the pedagogic use of word processing, e-mail, listserves, homepages, the Internet for curriculum enrichment and research, and electronic materials (text, audio, images) in presentation programs. The authors describe the recently completed Faculty Center for Excellence in Pedagogy and Media Technologies, a facility that provides faculty with access to two media specialist personnel and computer hardware and software. The authors also describe two teaching laboratories, one for group instruction consisting of a network of 21 PCs and another that is a 35-station teleconferencing laboratory for bridging learning distances.

I. College Overview

The College of Staten Island (CSI) is one of the eleven senior colleges (Baruch, Brooklyn, City College, Hunter, John Jay, Lehman, Medgar Evers, NYC Technical, Queens College, Staten Island, York) of the City University of New York (CUNY). Along with CUNY's Graduate Center, CUNY Law at Queens College, and CUNY's accelerated medical program and medical school, there are six community colleges (Borough of Manhattan, Bronx, Hostos, Kingsborough, LaGuardia, Queensborough). CUNY is the largest urban university in the United States and is the third-largest public university system. Over 204,000 students are enrolled for degrees on campuses in all five boroughs of New York City. Another 150,000 students take adult and continuing education courses.

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CSI is a college committed to access and excellence. It is a major urban public institution that offers a liberal arts curriculum to a diverse student population of 12,200 (8,400 FTEs), all of whom live off-campus. It offers an associate degree in selected areas, a comprehensive range of baccalaureate programs, a master's program in selected areas, and doctoral programs in cooperation with the CUNY Graduate School.

II. CSI's Electronic Network Infrastructure

In 1993, CSI relocated its facilities from two separate sites to a new 204 acre campus. Prior to this move, early planning for the new campus information network identified several key objectives:

(1) a network-centered electronic information environment where services are distributed to users much like electricity and water are provided as utilities, with the Office of Information Technology serving as the single point of contact for information services, network support, Help Desk contact, and selected training;

(2) a learner-centered electronic environment for on-campus or remote (dial-in) access to college services that may eventually include processes such as admissions (information and application), financial information (aid, balances, payment options), academic advising, course registration and information, records management, among other services;

(3) a mobile electronic environment for computer-assisted communication on-campus or off-campus from anywhere at any time.

Today, CSI's electronic infrastructure consists of two extensive disjoint fibre optic networks. The first data network consists of a high speed FDDI ring that connects eighteen campus buildings. Within each building, twisted pair ethernet connects each room. The linkage provides access to eighteen file servers and electronic mail, which are managed by the Office of Information Technology. This local area network (LAN) connects approximately 3,000 computers that are located in administrative, staff, and faculty offices and in fourteen computer-assisted laboratories throughout the campus, where each laboratory has an average of 36 work-stations.

CSI's LAN links to a wide area network, CUNYNet, by means of a 0.5 single T1 link which allows delivery of off-campus electronic mail and access to the Internet for World Wide Web use. The connection also provides linkages for scientific research among CSI facilities, supercomputer facilities at other universities, and to other CUNY university-wide computational facilities.

The second system is a media distribution single-mode fibre optic network for CSI's Integrated Media Information Distribution System (IMIDS), a $900,000 project begun in 1995 that is nearing completion and that is now in beta testing. The IMIDS consists of a head-end unit located in Library Media Services. It provides twenty source delivery devices. Forty-seven spaces (classrooms, teaching and research facilities, and administrative conference areas) are equipped with two-way video capability for receiving and transmitting signal to and from the head-end. In all, 110 spaces are wired to send/receive two-way video.

III. CSI's Vision for Electronic Technology

The faculty and administration have identified three broad goals that focuses CSI's vision for electronic technology:

(1) fostering and enhancing faculty commitment to effective teaching and learning;

(2) advancing the effective use of technology in all aspects of the college's operations so as to strengthen support services, teaching, and research;

(3) strengthening student interest in life-long learning, their purposeful participation in the issues that face our society, and their lively commitment to their own physical and spiritual well-being.

These goals provide shape to CSI's vision for using electronic technology in the classroom. Broadly stated, the vision is to provide a technologically advanced learning environment that facilitates the seamless transformation of information into knowledge. For students, this environment envisions helping them to acquire information that is directly related to their course work, facilitating opportunities to explore the world of knowledge, and helping students to acquire skills and capabilities that may be applicable in their post-graduate lives. For faculty, this environment envisions helping them to pursue, investigate, and create knowledge.

IV. Transformation Forces at Work for Electronic Technology

There are several forces at work within and outside of higher education to integrate information formats, delivery models, and electronic technology to enrich learning, teaching, and research. Three of these forces are the following:

1. New faculty are comfortable with computer-supported technology and eagerly embrace and willingly integrate it into their pedagogy and research. Senior faculty are encouraged and supported to integrate technology into their pedagogy through programs of release time, professional development, and faculty peer-to-peer mentoring.

2. Trustees and senior administrators have allocated increased funding for technology since it offers the institution a competitive advantage for the recruitment and retention of students, staff, and faculty.

3. Publishers are beginning to provide textbooks and other publications aimed at K-12 and higher education markets that integrate print with CD-ROMs, online databases, information networks, and telecommunications.

V. Facilities Supported by the Campus Infrastructure

CSI's electronic infrastructure supports the use of high technology hardware in several types of campus educational facilities:

(1) Multimedia laboratories (Windows and Macintosh platforms) for teaching subjects such as

accounting and finance, communications, computer-assisted design, computer sciences, graphic arts, history, modern languages, and science. These laboratories are also utilized for remediation and tutoring in subjects such as biology, chemistry, and mathematics.

(2) An Education Department training computer-assisted laboratory for K-12 teacher training that consists of a LAN, computer-workstations, and K-12 educational software.

(3) COMWEB electronic laboratories equipped with an analogue digital hybrid network to permit a teacher to control any computer in the laboratory from a teacher-station and display any computer on any group of computers in the laboratory. These facilities are used for teaching the Internet, digital library training, multimedia authoring, and similar other subjects;

(4) A satellite system for K and CU band reception, a direct digital TV satellite reception system, and local television broadcast facilities by way of the Staten Island Cable Television.

(5) A television studio with digital video editing facilities.

(6) For students with disabilities, a multimedia Center for Deaf and Hard-of-Hearing, a Multimedia Assistive Technology Laboratory for Students with Disabilities (visual impairments), a Disabilities Services computer laboratory with assistive technology, and assistive technology computer systems in the Library and the Biological/Chemical Sciences and in other campus buildings.

In addition to the facilities mentioned, the college's electronic infrastructure has allowed librarians to strengthen the role of the Library in the academic life of the college by employing technology to accomplish the following:

(1) distribute a large variety of sophisticated digital informational resources (abstracts, indexes, reference works) from a CD-ROM tower and/or the Internet to PC computers within the Library that are linked to the network;

(2) distribute digital Library information resources (CD-ROM and/or Internet based) over the network to any point on campus that is connected to the network, including faculty offices and teaching and research laboratories; (3) allow (eventually) CSI students and faculty remote access to the Library's digital informational resources over telephone lines.

CSI's electronic network is a key factor in allowing library collections of traditional books and journals to be creatively integrated and managed into an expanding electronic environment with digital and media resources. It is a key factor in allowing librarians to structure the library to become an electronic gateway to information services by extending its collections beyond the institution's walls to include resources available through electronic networks, fee-for-service databases, network consortia participation, and traditional library cooperative networks of interlibrary loan.

VI. Pedagogy and Media Committee's Role in Faculty Development

CSI's Pedagogy and Media Committee is composed of faculty, staff, and students who work in many areas on campus to integrate digital technology applications into teaching and learning. Each

semester the committee sponsors a series of seminars and workshops for faculty and staff who are interested to learn about technology. Some of the topics have included the following:

1. multimedia tutorial programs;

2. computer-assisted educational programs;

3. student-centered learning through discovery using the Internet's World Wide Web;

4. use of digital presentations and media-based material in classrooms;

5. creation of digital and multimedia materials for use in education;

6. teaching students to create digital and multimedia materials;

7. evaluating digital technology for effectiveness in teaching and learning;

8. exploring issues such as intellectual property and copyright (fair use doctrine).

The Pedagogy and Media committee also sponsors a more formal program for faculty who express interest to integrate technology into their pedagogy. Each semester two faculty members who are proficient in the use of electronic technology for classroom instruction are selected to serve as peer mentors. Each is awarded reassigned time to work closely with three to five other faculty colleagues. The objective of the collaboration is to provide information on teaching issues and information technology in learning and teaching. Examples of issues and electronic technology are the following:

(1) using electronic mail as a technology enhancer for professor and student communication (electronic office hours) along with word processing for effective communication;

(2) incorporating listserves (electronic journals), newsgroups, FTP and Gopher access to digital databases for curriculum enhancement;

(3) developing homepages for assignments and course syllabi (supported in part by a Microsoft Educational Grant);

(4) identifying selected Internet sites for curriculum support, enrichment, and research;

(5) incorporating electronic material (text, audio, images) into presentation program such as PowerPoint for instruction;

(6) applying advanced web technologies (multimedia effects, 3-D animation, Virtual Reality Modeling Language, application programs, and simulation modeling) into pedagogy.

Faculty coaching, bolster by technical support and training from staff media specialists, occurs in The Faculty Center for Excellence in Pedagogy and Media Technologies, a facility that is housed in Library Media Services. This facility is a focal point for integrating electronic technology in the

classroom environment. It is staffed with two media specialists, and its equipment includes state-of-the-art hardware (multi-platform computers, scanners, CD-ROM readers and writers, digital cameras, motion video capture and compression facilities, and traditional audiovisual equipment). Its software includes a variety of packages and off-the-shelf CD-ROM educational programs, and CUSEEME technology for video conferencing including picture-in-picture visual cues for a sign language interpreter for hard-of-hearing students. Adjacent to the center is a 21-station COMWEB computer laboratory with a teacher-station that allows faculty to test their programs in a model setting.

The Pedagogy and Media Committee steering group also coordinates the college's Teleconferencing Center. This facility is currently under construction. Beta testing is projected for the 1997 Fall Semester and to be operational at the beginning of the 1998 Spring Semester. Located in the Library, this facility consists of 35-stations. The Teleconferencing Center is an initiative in collaboration with CUNY's Office of Academic Computing (called 57th Street), the New York City Board of Education, and other collaborators interested in distance education in an urban environment. The facility will permit local television broadcast facilities by way of the Staten Island Cable Television. In addition, it will incorporate the use of fax, telephone, advanced web technologies over the Internet, and it will utilize CSI's Intranet. To support this facility, an additional T1 link is planned to connect the head-end of the Integrated Multimedia Information Distribution System to CUNY's Distributed Information System (CDIS).

CDIS currently consists of two-way video connections among the following sites: CUNY Television (located at the Graduate Center), the City College campus, and a central video conferencing and media distribution facility located at the CUNY's Office of Academic Computing. The system, when complete, will provide two-way video connections and shared media distribution facilities among seven CUNY campuses, CUNY Television, and the Office of Academic Computing.

Plans for distance education are embryonic. Discussions are currently underway among CSI, K-12 schools on Staten Island, and other CUNY campuses.

VII. Summary

CSI's administration has been successful in providing the college and research community with an open, network-centered technology for accessing information. Substantial progress has been achieved in providing faculty and administrators with workstation computers for access to data stored on local files or that is accessible through the campus Intranet or Internet linkage. Comprehensive, technologically sophisticated teaching laboratories are in place and operational for students who generally do not otherwise have access to computer equipment. The Library continues to develop its collections to integrate print with digital resources.

General and more formal programs of faculty development are conducted under the auspices of the college's Pedagogy and Media Committee. These include workshops and seminars offered each semester to the college community, and a formal program of faculty peer-to-peer mentoring for faculty who express an interest to use computer-assisted technology in their pedagogy.

The Pedagogy and Media Committee oversees a Faculty Center for Excellence in Pedagogy and Media Technologies, a 21-station COMWEB computer laboratory, and a Teleconferencing Center.